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ABSTRACT

The FIPSE-funded Science and Self-Determination Project was conceptualized as a response to help alleviate the critical need for Native American scientists who would be able to deal with issues and concerns both within and outside of the Native American community. Objectives of the Science and Self-Determination Project were to prepare pre-collegiate students for access to careers in science; to train teachers and/or counselors in more effective methods of identifying, preparing, motivating, and retaining Native American students in school so these individuals can aspire to careers that are science oriented; and to create an effect within the Native American communities that will increase awareness of and the need for support for careers that will ultimately provide survival and self-determination. Thirty-six students were recruited to spend July, 1981, on the University of Colorado campus to participate in this specially designed experientially focused program. Student participation was in the following activities: reading and writing assignments pertaining to basic scientific information on matters relating to Indian concerns in energy resources; on-site activities at five laboratories where scientific research was in progress; interacting with scientists, both Indian and non-Indian; visiting applied science facilities; and participating in experiential activities focusing on botany, climatology, geology, and survival skills. (ERB)

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ED226874

FINAL REPORT

SCIENCE AND SELF-DETERMINATION/FIPSE

1981

American Indian Educational Opportunity Program

University of Colorado

Boulder, Colorado

[Ward Churchill
Ann Card]

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COVER SHEET

Granting Agency: Fund for the Improvement of Postsecondary Education

Program Officer: Manuel Gomez

Grantee Organization: American Indian - Educational Opportunity Program
University of Colorado - Boulder
Campus Box 135
Boulder, Colorado 80309

Grant Number: G00 80004285

Project Director: Ann Card
American Indian - Educational Opportunity Program
University of Colorado - Boulder
Campus Box 135
Boulder, Colorado 80309

Telephone Number: (303) 492-8241

Project Dates:

Starting Date: 09/19/79

Ending Date: 09/19/81

Number of Months: 24 months

Grant Award: 1st Year: $51,135

Continuation: $37,643

Extention: $13,492

EXECUTIVE SUMMARY

Project Title: Science and Self-Determination

Grantee Organization: Fund for the Improvement of Postsecondary Education
7th and D Streets, S.W.
Washington, D.C. 20202-3328

Project Director: Ann Card
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PROJECT OVERVIEW

In the fall of 1979, the University of Colorado received a one year grant of $ 51,135. to develop Native American high school students a summer program that would acquaint the students with science/math careers and give academic support and assistance to students to they could access to these careers. The program was experientially oriented with "hands-on" and one-on-one experiences with practicing scientists as well as academic reinforcement in the areas of math, reading and expository writing.

PURPOSE

The aim of the project was to acquaint American Indian high school students with first hand information about careers in science and to provide academic support that would improve performance on college entrance tests so these students would be able to access to careers in science and/or math at the university level.

BACKGROUND AND ORIGINS

The American Indian - Educational Opportunity Program sees as imperative the need to increase the number of Native American scientists. Because of the rich energy resources on Indian lands and the total derth of technically and professionally trained Indian personnel, non-Indians are making decisions that are deleterious to Indian self-determination. Indian youth cannot access to scientifically oriented careers without adequate information and preparation. To give this information and assist in this preparation was the focus of the FIPSE Science and Self-Determination Project.

PROJECT DESCRIPTION

During the first year of the project, 35 students ranging in age from 13 to 17 were selected to participate in a month long, on campus, extensive educational experience. In addition to classes in math, reading, expository and science skills, the students spent two afternoons a week as observers / participant in five of the National Oceanic and Atmospheric Administration laboratories. These two components were interfaced with a counselling component that addressed cultural concerns, survival skills, social interaction skills and personal adjustment problems. Very high expectations were placed on participants and staff. Both responded with an unusually high degree of accomplishment.

The second year of the project was expanded to include a work experience for nine returning students. These students acted as interns in jobs that were closely related to their career goals. In addition to their work experience, they received academic support in areas where the students had a recognized or felt need.

OUTCOMES AND IMPACTS

The Science and Self-Determination Project was funded as a model program which would be possible to replicate. All of the materials needed to conduct a similar program are available upon request.

The program itself was highly successful (as attested to in the final report) in the areas of academic growth, career awareness, and cultural interface and counselling. The impact of the program went far beyond the advantages afforded the individual students. An awareness that would be difficult to measure was created within the Indian community and within the educational community serving Indian students. This awareness dealt with not only the need, but with practical (although, partial) solutions that could be implemented at the grass roots level.

SUMMARY AND CONCLUSIONS

This Science and Self-Determination Project resulted in creating an awareness of the need for early identification and training of Indian youth who have the potential to pursue careers of science/math. The project also demonstrated ways this early training could be addressed in order to effect a positive growth academically and personally. The project also addressed ways to make grass roots personnel responsive to the needs of the Indian community in the area of scientifically trained personnel. Efforts are being made to continue this project with the assistance of corporate and foundation funding.

FIPSE

SCIENCE AND SELF-DETERMINATION

1981

PROJECT OVERVIEW

The Science and Self-Determination Project was conceptualized as a response to help alleviate the critical need for Native Americans scientists who would be able to deal with issues and concerns both within and outside of the Native American community. Because careers in any field of science assumes strong pre-collegiate preparation, and because of a long history of non-access to science by Native American students, the American Indian Educational Opportunity Program at the University of Colorado determined that is was imperative that early and innovative academic training and appropriate counselling be made available to Native American high school students in order to motivate them to consider science careers. It was determined that this process could best be done in an intensive month-long summer institute on the University campus. Thirty-six students were recruited to spend July, 1981, on the campus in a specially designed experientially focused program. Twenty-six students were in the basic program that was being conducted for a second year. Nine students were placed in private industry or government agency as interns so they could have a work-oriented experience.

Because only a limited amount of impact can be made in a short time, another facet of the problem to be addressed by the project was to provide counselor/teacher workshops that would provide training and/or information on how to motivate and counsel students into science careers.

Both the summer institute and the counselling workshop were conducted during the 1981 funding period. Encouraging and positive results attested to in greater detail later in this report were noted. Summarily, it can be stated that all students made academic progress in at least one area. All students acquired greater knowledge and information about science careers, and to date, all students have stayed enrolled in high school and are making progress toward graduation.

PURPOSE

The purposes of this Science and Self-Determination Project are three:

1. to prepare pre-collegiate students for access to careers in science,
2. to train teachers and/or counselors in more effective methods of identifying, preparing, motivating and retaining in school Native American students so these individuals can aspire to careers that are science oriented,
3. to create a ripple effect within the Native American communities that will increase awareness of and the need for support for careers that will ultimately provide survival and self-determination.

The problem to be addressed by this project is the critical need for Native American scientists. The reasons for the dearth of professionally trained and educated scientists have been addressed in other projects by other researchers. Let it suffice to be said that in order for the Native American population to reach parity with the rest of the population, the following numbers of professionals are needed today:

- 1,000 medical doctors
- 100 veternarians
- 2,000 registered nurses
- 400 dentists
- 50 opticians
- 100 clinical psychologists
- 4,000 engineers
- 200 architects
- 100 business managers
- 800 lawyers
- 100 geologists
- 100 forest and environmental biologists
- 8,000 elementary and secondary educators
- 15,000 higher education personnel

Only 2,500 individuals are enrolled in all of these programs currently, and the rate of drop-out is well over forty percent. As can be seen from statistics such as these, there is an acute shortage of all types of scientifically trained personnel. These numbers refer only to the minimum number needed to reach parity, and addresses in no way the actual need, both on reservations and off reservations, to deal with problems, concerns and issues of the Native American community. The problem having been defined, some consideration for causes of this problem need to be considered. Only a small percentage of Indian students even attempt to enter higher education, and

even a smaller number try to enter colleges of engineering, science or medicine. Reasons for this low number of recruits are many and varied. Among them would be:

- poor academic training because of ineffective or inappropriate educational programs,
- a lack of understanding of what science careers involve,
- low self-esteem and low expectations of success,
- lack of role models,
- misunderstanding about possible conflict between science and traditional Indian life, and
- inadequate motivation to attempt and to succeed in a long and difficult educational career demanded by science careers.

Once recruited, the drop-out rate is great. Reasons for dropping out include such things as:

- cultural isolation
- hone-sickness
- unfamiliar surroundings
- fear of failure or success
- irrelevancy to tribal needs and individual needs
- financial problems
- lack of understanding about how to use support systems, etc.

To attempt to remediate all of these conditions is not only impractical, but probably impossible. Therefore, the American Indian Educational Opportunity Program focused on three areas the staff felt that they could effectively impact; namely, an intense academic reinforcement program, counselling that included both cultural and career concerns, and an effort to provide good role models to promote and improve self-concept and self expectations. Once defined, these three areas still, after two years, appear to be areas of concern that are both able to be remediated by programs such as the Science and Self-Determination Program and areas which have long range and long lasting effects upon the students involved.

PROJECT DESCRIPTION:

The first area of concern to be addressed was that of an intense, academic reinforcement program. The summer institute settings intended to address this need, and was designed to provide for all students a core curriculum in science, mathematics, expository writing and reading skills

which would produce measureable improvements in students' abilities as measured by appropriate instruments in a pre/post test comparison. Coupled with the core curriculum offerings were instructional offerings to provide first-hand experiential "hands-on" learning experiences for all students.

Recruitment of students began in October, 1980. (See Appendix I for sample of application.) Regular EOP personnel and college recruiters contacted high schools in ten states throughout the regions. Wide mailings to additional sites were made from October through January, 1981. These efforts resulted in 110 viable applications to be considered for participation in the summer program. Student selection took place on the scheduled date of March 18, 1981. A screening committee composed of EOP Director, Ward Churchill, Project Director, Ann Card, AI-EOP counselors, Mary Jo B. Manydeeds and Roseanna Sneed, and advisory board members, Carol Gardipe and Steve Manydeeds considered the applications. Criteria for student selection included: student cumulative grade point average, courses that had been attempted in math and science, geographical tribal distribution, a brief essay by each applicant indicating why he or she wished to attend the institute, and three recommendations by appropriate teachers, counselors, administrators or community leaders attesting to the candidate's motivation, perseverance and potential.

Twenty-six applicants and ten alternates were chosen from the pool of 110 applicants. These individuals represented fifteen tribes, ranged in age from thirteen to seventeen, originated from eleven different states, were 52 percent female, 48 percent male, had an average GPA of 3.4 on a scale of 4.0, had expressed interest in science and/or mathematics as career options, and were recommended by their teachers and counselors as students of better than average academic and intellectual potential.

Of the twenty-six original students selected, twenty-four accepted. The two who declined were replaced by alternates. Of the twenty-six who accepted, all arrived an campus and all completed the four-week program. Participants came from homes which represented various points on a continuum relating to blood quantum, educational level and occupational level.

After students were selected and had accepted, an organized effort was made to remain in contact with the student and to have them involved in their preparation for the month on campus. (See Appendix II for copies of Newsletters, Questionnaires, and general corespondence to all participants.)

Questionnaires the students were asked to complete was an effort to acquire information from each student about his/her self image, learning style, social traits, and other important characteristics needed when selecting roommates, counselling needs, classroom placement, and organized recreational activities. Students were asked to interact, by letter, with another member of the group as an effort to facilitate social interaction in the early, often awkward, stages of adolescent encounters. The plans to house students on campus made it apparent that students neded to know prior to their arrival the expectations of dormitory living; therefore, a student handbook was generated and provided to the student. (See Appendix III.) Because so many students were from out-of-state, and because of the relative difficulty of direct travel to Boulder, travel plans were requested from students. (See Appendix IV.) Staff members were assigned to meet planes and busses or to meet with parents to provide whatever assistance was necessary.

STANDARIZED TEST INFORMATION

Prior to the arrival of students on campus, the Stanford Diagnostic Reading Test and the Stanford Diagnostic Mathematics Test were sent to each student's home school. Counsellors were asked to administer the tests and to return them to the AI-EOP to be corrected. On the basis of these test results, students were divided into somewhat homogeneous groups and efforts were made to individualize the instructional materials. Because of the brief time the students were on campus, and to make time utilization more efficient, individualized learning in skill areas was a basic teaching methodology. At the end of the summer program, form B of the same standarized tests was administered to each student to determine academic growth. These results are reported on Table I.

TABLE I

Stanford Diagnostic Reading Test

Reading Subtest	% of Student Scores Showing Improvement
Decoding	60%
Vocabulary	7[illegible]%
Comprehension	52%
Reading Rate	60%

TABLE II

Maximum Range of Improvement	Average Gain
Decoding: 58%ile to 82%ile	13%ile points
Vocabulary: 38%ile to 70%ile	14%ile points
Comprehension: 30%ile to 73%ile	11%ile points
Reading Rate: 7%ile to 95%ile	21%ile points

TABLE III

Stanford Diagnostic Math Tests

Mathematics Sub-Tests	% of Students Scores Showing Improvement
Number Systems	52%
Computation	48%
Application	60%

TABLE IV

Maximum Range of Improvement	Average Gain
Number Systems: 31%ile to 53%ile	11%ile points
Computation: 32%ile to 89%ile	39%ile points
Application: 12%ile to 35%ile	29%ile points
Total Math: 36%ile to 72%ile	26%ile points

Near the end of the summer program, it was learned that in certain schools, the pre-tests which had been given in the student's home schools had not been monitored by counsellors and/or teachers. As a result, the scores on the pre-tests were, in some cases, fallaciously high. As a result of this, the gain shown over the summer did not register at the same level that it had the first year of the program. Nevertheless, students tended to show growth in all areas with very minimal regression by some

students. Where regression is present, their work determined that the students' pre-test scores, in all probability, were not accurate.

From test results which show positive growth, one would hope to hear positive evaluative remarks from the students. Such is the case as reflected in student's narrative program evaluations.

Classroom instructors were rated above average in methods used and materials used. Classroom teaching assistants who were current university students were evaluated as being most helpful and informative in their efforts to assist students. A minimal amount of tutorial voluntary assistance was utilized to better accommodate the wide range of achievement levels of the students. This service was perceived by students as most helpful. Most reading and writing assignments were correlated to the basic scientific information being covered in off-campus experiences or to matters which particularly related to Indian concerns in science such as energy resources or environmental concerns.

For the second year, the students' writing assignments were compiled into a modest publication entitled Echoes II. (See Appendix V.) This publication included interviews that students conducted when prominent scientists or Indian leaders were on campus, various types of creative writing including poetry, personal impressions or journal entries, and reflections on what it meant to be involved in an Indian science educational project.

Student comments about the academic component of the Science and Self-Determination Project included such things as, "I worked very hard, but I learned a great deal." "I wish that I could have spent eight hours more a day learning the things that I have not had a chance to learn in my own school." "This program is the best educational experience I have ever had."

EXPERIENTIAL LEARNING

The experiential learning component centered upon the utilization of a specially designed three-week sequence of instructional modules coordinated with the National Oceanic and Atmospheric Administration (NOAA) laboratories in Boulder. This component included on-site activities in five of the laboratories where current scientific research was taking place. (See Appendix VI.) Students had the opportunity to interact in small groups of five students with the scientists who were conducting the research, and

on certain occasions, to participate in some of the activities in which the scientists were engaged. Efforts were made to prevent this contact from being a lecture series. Distinct efforts were made to directly involve students in specific activities with an explanation of what the hoped-for results would be. Students' responses were positive auditory when describing reactions to their NOAA experiences.

In addition to the NOAA component, students had the opportunity to visit many applied science facilities. Among them were Allied Chemicals, National Bureau of Standards, the National Earthquake Research Laboratory, the EDGAR Mine maintained by the Colorado School of Mines, an on-site visit to the Amoco Oil wells and refineries, and the Air Force Academy. (See Appendix VII for a field trip list.) In their evaluations, students clearly preferred format divorced from requirements of essentially passive participation. They thoroughly enjoyed and learned from the direct involvement with assorted laboratory equipment, telescopes, lazar beams, and so forth. Students' reactions were typical to the one which read, "to do means so much more than to hear".

In addition to the day-to-day field trips and hands-on experiential learning experiences, four and one-half days were spent at the Alpine and Artic Research Institute (Mountain Research Station). Here the students experiences were focused more specifically on tundra botany and high altitude climatology, geology and the necessary practical survival skills required when working in this environment. The activities included hikes above the timber line to explore and examine flora, geological formations, and a glacial mass. Animals and insects were trapped and observed. Atmospheric conditions and other environmental conditions were directly commented on by instructors and experienced by students.

All in all, the experiential component developed to accompany the core curriculum is perceived as having provided students with a broad exposure to the possibilities of various scientific fields and occupations ranging from physics to solar research, to hydrology, botany, biology and meteorology.

Many persons, predominantly Native Americans, currently engaged in professional scientific careers, interacted with students during the summer institute. (See Appendix VIII for list of guest speakers.) Guest speakers who addressed students were ranked in a similar manner to the experiential

learning activities. Those speakers who talked only were less appreciated than the speakers who managed to elicit dialogue between the speaker and the students. Students did recognize the importance of the contribution of all speakers, however, and frequently commented in their evaluations on the impressions made by the speakers. Students were particularly impressed with the willingness of the scientists to involve themselves in a one-on-one relationship with students and to offer to remain in contact with the students to help solve some particular problem or to provide some particular service. Students were particularly pleased when the speaker was an Indian because, as one student commented, "To see one of my own people telling me how to reach my goal means a lot because that person understands what must be overcome."

Other types of off-campus field trips that received high ratings from students included those that had cultural information and implications. The Museum of Natural History and the White Buffalo Council Pow-wow were by far the most popular excursions. Two extended trips to the mountains, (the week-end at Camp Paul Hummel, and a four and a half-day stay at the Mountain Research Station) were experiences highly prized by the students.

The experience at Camp Paul Hummel, which made a lasting impression on students and staff, was conducted the first week-end that the students were on campus. It was basically a program to facilitate group cohesion early in the institute as well as to provide the opportunity for students and staff to get to know each other. In addition to some group building activities, students had an opportunity to engage in special interest seminars devoted to art, poetry, mapping, and crafts. A series of group skits gave students and staff a chance to exercise some creative drama talent and improvisational skills that resulted in a close knit, friendly camaraderie between staff and students.

COUNSELLING

One of the concerns recognized and frequently expressed by all staff members from the inception of this project has been the critical need for a strong counselling component. This counselling necessarily had to encompass the following aspects:

- assist students in their efforts to deal with their Indian identity
- provide support in handling general adolescent concerns

- provide career counselling
- teach survival skills to be utilized in any future university endeavor
- keep the student "on track" and motivated to aspire to higher education

This counselling component developed into a three-pronged delivery service:

- career counselling
- cross-cultural concerns
- intervention in personal or group concerns

Career Counselling

This service included dissemination of information as well as the use of some interest and preference instruments, and the COSIS computer terminals. Efforts were made to make available all the information a student might need to make a conscious, informed choice about careers in order to avoid "career accidents". Students' reactions to the career education component were mixed. They approved of being given the information, and saw as valuable the time used to find out unknown facts. However, they were critical about the amount of time spent in actual career exploration. Those students who had made career choices preferred to do a "one-on-one" question and answer investigation. Those students who were undecided about viable career options preferred more time to independently investigate various career fields. Students were especially critical about the lack of time devoted to using the COSIS computer. Staff members affirmed student findings.

Cross-cultural Concerns

The counselling component dealing with retaining Indian identity and cultural values in a non-Indian environment was viewed by students as particularly valuable. This component was delivered by:

- the frequent use of Indian professionals as speakers, role models, and interactors with students;
- the scheduled visits to places that addressed Indian contributions to culture and to career areas reflecting the need for contemporary Indian involvement; and
- the use of appropriate films coupled with discussions.

All of these experiences were rated as very valuable in the students' per-

ceptions. They evaluated speakers in terms of information given as well as whether each should be invited to interact again with the group. Without exception, Indian speakers rated higher than non-Indians. This seemed to be for reasons of identity and for speaker's ability to understand possible conflicts being experienced by Indian students. For many students, this experience was their first attempt to identify and reconcile problems of cultural retention and possible conflict with advanced training. Many had not considered, although all seemed aware, of the strengths they brought from parental and tribal support, and the pending obligation this expectation placed on them. Perhaps most telling was the fact that many students never really expected or anticipated being as good or better than their non-Indian counterparts in academic and/or professional endeavors. To begin to comprehend the extent of their capabilities and the possible far-reaching obligations was a sobering, yet exciting, realization for many of these young adults.

Intervention in Personal Counselling and/or Group Concerns

Personal counselling was accomplished by various personnel in the program. Students, as a whole, viewed the personal counselling as adequate. Staff members agreed that having dorm counselors separate from teachers, and having very capable, out-going (albeit non-Indian) teaching assistants gave the program the needed person-power to respond to normal developmental adjustments to group living and being away from home for the first time. Also, the crisis intervention was minimized by having adequate staff to address problems and by experiences gained from the first year's program.

From the week-end at Camp Paul Hummel stemmed group strengths recognized by the students as the foundations for trust and friendship. Many students also found the experiences there to be uniquely challenging to their tolerance and ecumenical spirit. Another group member felt the group cohesiveness attained at Camp Paul Hummel was the "basis of friendships that would, undoubtedly, last a lifetime and help sustain many of us through many difficult times we might have in the future".

Because of counselling experiences (both individual and group: formal and informal) all students progressed in social skills. They became able to form close, trusting, cooperative bonds with peers. Supportive relationships were established that may well serve to sustain certain individuals for many years to come. All students became more aware of their identity

as Native Americans. They confronted the problem of maintaining cultural identity in the scientific world and received guidance from other Indians who have succeeded in this area. Additionally, students from specific traditions learned from and shared with students from different tribal traditions.

GENERAL INFORMATION

In addition to the areas already addressed in this evaluation, other, more general types of growth were observed, recorded, and addressed by staff and students. These areas included the following:

- All students grew in their awareness of scientific careers as viable career options, and in most cases, students reaffirmed their decision to pursue a scientific course of study.
- All students developed some degree of competence in survival skills needed to deal with a large university community. They confronted successfully the contingencies of dormitory living, learned to locate goods and services, and to ask for and receive information and assistance.
- All students learned to deal effectively with large amounts of information and to make this information manageable through various organizational devices and skills.
- All students were made aware of their capabilities to raise their expectations for a high level of accomplishment in various areas. Motivation to succeed and a self-image of a person who would succeed became an effective modus operandi for members of the group.

On the last day of the FIPSE encounter, Ward Churchill, Director of the American Indian Educational Opportunity Program, addressed the students at a final banquet and capsulized the spirit and, assuredly, the feelings of the staff and students when he said:

> "Every Indian student who walks out of school possessing a fundamental knowledge of science is one more weapon in the struggle for self-determination, for preservation of culture and the Indian way of life... There is nothing inherently non-Indian about science... Indians have always been scientists. Indians had led the world in agriculture, pharmacology, ecology, some aspects of architecture, applied hydrology, astronomy and a lot of other things... Today the fundamental connection of science and Indian culture is not only possible, it is absolutely necessary. That's why we look at this summer project as Science and Self-Determination. You can't have one without the other."

RECOMMENDATIONS

While the overall evaluation of staff and students was positive, acknowledgement of areas needing improvement were listed as follows:

- Participation should be limited to ninth and tenth graders to reduce disparity of student development in all areas.
- A computer terminal needs to be made available at all times for student use, both in the area of career counselling and in the area of computer technology.
- A well-equipped laboratory needs to be made available to students.

The second Science and Self-Determination project has been highly successful if viewed in light of the growth in the following areas:

- academic achievement
- social development
- cultural retention
- Indian identity

The problems that were identified by staff and participants can be addressed in planning the up-coming years of the program so an even more productive project can be anticipated. Staff and students agree that a summer program such as this provides an experience to students that is both valuable and needed. Such a program deals with issues that would be impossible to address in any other situation, yet if not addressed, can make the difference between success and failure in the 20th century Indian peoples' quest for self-determination.

FIELD WORKSHOP EXTENSION TO APPROPRIATE COUNSELLORS/TEACHERS

As stipulated by project design, the 1980-81 project endeavored to extend in-service developmental workshops to the counsellors/teachers of Native American students within the primary impact region.

In October, 1980, a trip to North Dakota initiated contact with appropriate personnel within the region. The purpose of this trip was primarily to follow-up on 1980 students and to recruit new students. A secondary purpose was to determine initial workshop location, configuration, and content. The project received an enthusiastic response to these inquiries. As a result, a return trip was made in February, 1981, at which time a workshop was held for all high school and junior high school counsellors in the Fargo, North Dakota Public Schools. Another session, of a slightly different content, was held for a multi-cultural class taught through Moorhead State University, Minnesota. Later in the spring, seven high schools (some all Indian, some with a high percentage of Indian students) in South Dakota requested the same counsellor workshop. Attendance at this workshop was very disappointing (only two schools attended) but students were recruited from these sessions and counsellors who were in attendance felt the information was valuable and helpful. A condensed version of the counsellors workshop was presented twice at the University of North Dakota in Grand Forks, North Dakota, once in February and once in July, to different audiences.

A single day of interaction with teachers of minority students at Castle Rock High School in Castle Rock, Colorado, took place in October. Fifteen individual counsellors in schools in Montana, Utah, Colorado and Wyoming were contacted and given in-service information and assistance. During July, an evening workshop for six Title IV and/or teachers/counsellors of Indian high school students in the Denver Metro Area came to the campus to observe the summer program and to learn how students had been recruited and motivated to attend. Totally, 107 counsellors/teachers were exposed to the Counsellors' Workshops. Their reactions are recorded on Table 15A.

TABLE 15A

COUNSELLOR REACTIONS				
	Very	OK	Barely	Not at all
1. Information presented was valuable.	79	19	5	3
2. Use of film was an effective way to introduce the material presented.	82	16	-	3
3. Group discussions were helpful to me in enabling me to deal with my own feelings about the film.	60	26	6	1
4. Use of pencil and paper instruments helped me see the need to recognize various styles of learning.	60	20	12	15

5. The workshop was:

1	Too long
89	About right
11	Too short

Suggestions for improvement:

APPENDIX I

STUDENT APPLICATION

FIPSE

APPLICATION

Date _____

Name _____ Male _____

Mailing Address _____ Female _____

_____ Telephone ( ) _____

High School _____ Grade _____
Name

_____ GPA _____
Address

Tribe/Agency _____ Birthdate _____
Yr Mo Day

Degree of Indian Blood _____ Age _____

Social Security Number _____

In which science/math fields are you interested? _____

Math Courses Taken in High School — Grade Received

_____ _____

_____ _____

Science Courses Taken — Grade Received

_____ _____

_____ _____

Have you ever participated in a student science program before? ☐ Yes ☐ No

If your answer is Yes, please list:

Name of Institution _____

Director _____ Dates _____

Subjects studied: _____

_____

Mother's Name _____ Father's Name _____

Occupation _____ Occupation _____

Please list the names, positions & addresses of 3 persons to whom we can send reference forms:

Name _____ Position _____

Address _____

Name _____ Position _____

Address _____

Name _____ Position _____

Address _____

On a separate sheet of paper, in your own handwriting, write an essay of at least 200 words telling why you want to attend the FIPSE Summer Institute and what you hope to gain by participating.

BEST COPY AVAILABLE

SCIENCE AND SELF-DETERMINATION

AMERICAN INDIAN-EOP/FIPSE
UNIVERSITY OF COLORADO, BOULDER
SUMMER 1981

SUMMER SCIENCE INSTITUTE

The American Indian Educational Opportunity Program (AI-EOP) at the University of Colorado, Boulder (UCB) has received funding from the Fund for the Improvement of Post Secondary Education (FIPSE) to conduct an All-Indian Summer Science Institute during the summer of 1981. The Institute shall be located on the UCB Campus at the base of the Rocky Mountains.

Twenty-four students shall be selected from the total number who apply. Selection shall be based on a combination of student grade point average, recorded participation in science/math curriculum, a brief essay concerning the student's motivation(s) in pursuing a career in science, and the recommendations of three counselors/teachers. Application is restricted to Native American youth currently enrolled in grades nine or ten.

The twenty-four selected students shall attend a four-week (July 6 - August 1, 1981) tuition-free session of intensive science skills development. The curriculum includes Expository Writing, Reading Skills, Pre-Collegiate Mathematics and a Science Survey. Field trips will take students to on-site scientific activities in the Denver Metro area. Various speakers/lecturers representative of Native Americans successfully pursuing professional science careers will participate during the course of the institute.

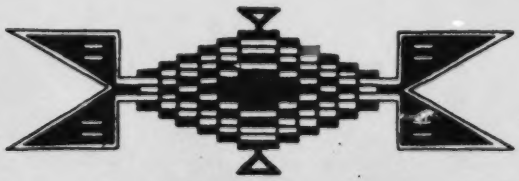
In addition to the 24 new incoming students, ten 1980 participants who have expressed interest and possess the necessary academic skills will be invited to return for a second summer. These students will be placed individually in specialized areas of science where each will be able to experience a one-to-one working relationship with a successful scientist engaged in various scientific activities.

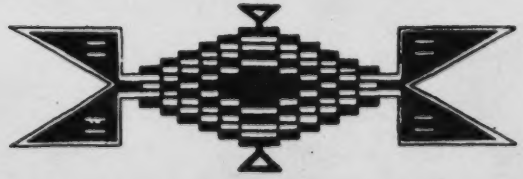
Individualized counseling and tutorial assistance will be stressed during the institute. Emphasis will be placed on retention of cultural values representative of each student's tribal heritage rather than assimilation of non-Indian cultural perspectives.

Housing, meals and instructional materials are provided free of charge to participating students. Transport to and from the institute and pocket money are the responsibility of individual students. Medical insurance is provided by the institute during its formal operation only.

Interested students should fill out the accompanying application completely and attach current high school transcripts and the essay requested. Only completed applications will be considered. The application deadline is February 20, 1981. Selected students shall be notified in writing not later than May 1. For further information, write or call:

Ann Card
Project Coordinator
AI-EOP/FIPSE Project
Campus Box 135
University of Colorado, Boulder
Boulder, Colorado 80309
(303) 492-8241





APPENDIX II

NEWSLETTERS, QUESTIONNAIRES, GENERAL CORRESPONDENCE

UNIVERSITY OF COLORADO, BOULDER

American Indian
Educational Opportunity Program

March 3, 1981

Dear

Your application for the Summer Science Institute has been received in this office. However, the items checked below were not included. Please arrange to have the information sent at once. Student selection is March 10, 1981.

_____ Application form

_____ Essay of why you wish to attend the institute

_____ Transcript from your high school

_____ Names and addresses of references

Chris Korb
Administrative Aide, FIPSE

P.S. If you receive this letter too late, please send the information anyway. If you are selected we will need it.

Willard Administrative Center • Campus Box 135 • Boulder, Colorado 80309 • (303) 492-8241

UNIVERSITY OF COLORADO, BOULDER

American Indian
Educational Opportunity Program

March 25, 1981

Dear

Congratulations on your appointment to participate in the FIPSE Summer Science/Math Institute. I hope you are looking forward to coming to Boulder as much as we are looking forward to having you in the program.

Enclosed with this letter is a copy of the Student Handbook that tells you all sorts of things I think you need to know about the Summer Institute. Please read it carefully. Near the back of the book is a list of things you must do. Please complete the first two items — that is, send back your Informed Consent form and the In Loco Parentis form. I have enclosed an envelope for you to use. We need the form returned by April 15, 1981.

After I receive your Consent form, I will send you a check list of items you will need to do between April 1 and July 1. Nearly every week, you will be hearing from someone in the program. If you have questions or concerns, please let me know so we can help you take care of any problems.

Again, CONGRATULATIONS! I'll be expecting to hear from you by April 15 with the first two forms telling us you're coming to Boulder.

Enjoy the rest of the school year.

Sincerely,

Ann Card

Ann Card
Director
FIPSE Project

encl.

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Willard Administrative Center • Campus Box 155 • Boulder, Colorado 80309 • (303) 492-8241

UNIVERSITY OF COLORADO, BOULDER

American Indian
Educational Opportunity Program

March 25, 1981

Dear

Congratulations! You are one of the alternates for participation in the FIPSE Summer Science/Math Institute. This means if one of the regularly chosen students cannot come, you will be notified that you may come in that student's place. You may be notified anytime between now and July 6.

Because I need to know if you are interested in being an alternate, please sign the form below and return it to me. If you tell me you do not want to be an alternate, someone else will be chosen in your place.

Thank you for applying for the Institute and please return the form immediately.

Sincerely,

Ann Card
Director
FIPSE Project

☐ Yes, I want to be considered an alternate for the FIPSE Program.

☐ No, I do not want to be considered an alternate for the FIPSE Program.

_____ (DATE)

_____ (YOUR NAME)

Return to Ann Card:

Willard Administrative Center • Campus Box 135 • Boulder, Colorado 80309 • (303) 492-8241

UNIVERSITY OF COLORADO, BOULDER

American Indian
Educational Opportunity Program

March 25, 1981

Dear

Thank you for applying for the FIPSE Summer Science/Math Institute. We received applications from many excellent and interested studetns. Unfortunately, we are able to select only 26 students to participate. Although we were impressed with your application, letters of recommendation, and transcript, you are not one of the final students selected. We will keep your application on file and notify you if a vacancy should occur because of a participant's inability to attend.

Thank you again for your interest and application.

Sincerely,

Ann Card
Director
FIPSE Project

Willard Administrative Center • Campus Box 135 • Boulder, Colorado 80309 • (303) 492-8241

CHECK LIST

☐ You must send Informed Consent and In Loco Parentis form by JUNE 6.

By June 2, I will have mailed a questionnaire and requested an autobiography from you.

☐ You must return your completed questionnaire and autobiography by JUNE 16.

By June 15, I will have mailed a Newsletter to you telling you more details of the summer's activities and requesting you write a letter to a specific member of the group and send me your travel plans.

☐ You must mail TRAVEL PLANS form and write a letter to a member of the group by JUNE 20.

By June 25, I will have mailed the last Newsletter to you with all the lastest information.

☐ You must be in Boulder on Campus on July 6 by 5 pm. If you're planning to come by car, plan to arrive between 12 and 5 pm. If you're flying or busing to Denver, we will plan to meet you in Denver.

CHECKSHEET

[X] By April 27, I will have mailed this checksheet and the first newsletter.

[ ] A questionnaire will be mailed to you May 1, including a request for an autobiography and a writing sample.

[ ] You must return your completed questionnaire, autobiography and writing sample by May 12.

[ ] By May 20, I will have mailed a schedule of summer activities to you and a request for you to write a letter to a specific member of the group.

[ ] You must have written a letter to a member of the group by May 27.

[ ] By June 1, I will have mailed another newsletter to you with all the latest information and a request for your travel plans.

[ ] Your travel plans must be mailed back to us by June 15. You must be in Boulder on campus on July 5 by 5 P.M. If you're planning to come by car, plan to arrive between 12 noon and 5 P.M. If you're flying or busing to Denver, we will plan to meet you in Denver.

[ ] The final newsletter will be sent to you on June 20. It will include a request for you to write an additional letter to a second member of the group.

UNIVERSITY OF COLORADO, BOULDER

American Indian
Educational Opportunity Program
SUMMER SCIENCE/MATH INSTITUTE

NEWSLETTER I

April 28, 1981

Welcome to the FIPSE Program! Your consent forms and parent permission forms have reached me -- all but two of you and your telephone calls have assured me you're coming. In your student handbook, you might like to mark off Steven Scott from Nebraska. He will not be attending the Institute. Michael Gardipe has replaced him. Melissa Smith, the # 7 alternate has also withdrawn from the program.

* * *

Many of you have already taken your reading and math tests and your counselors have returned them to me. This is a great help to us because we can begin to complete individual study plans for each of you.

* * *

There are a number of things we will be doing this summer that you might like to know about. The first week-end you are on campus -- July 10, 11 and 12 -- we will go to a mountain location -- the exact camp isn't determined yet -- for a group retreat. It will be your opportunity to get to know your fellow FIPSE-ites and the staff. We hope to have an Indian botonist there to do some instructing about traditional herbs and plants. Other kinds of activities will be scheduled also, including use of the telescope.

From July 20 to July 25, you will be at the Mountain Research Station. This is a research facility maintained by the University up in the mountains at about 9,000 feet. All sorts of special activities have been scheduled there: animal tracking and trapping for marking (the animals are not killed, just caught, marked and let go again), glacier walks, study of Alpine Flora and fauna and other exciting things.

Because the station is very high in the mountains and because we will be hiking and working in remote tundra areas where the winds are very strong (and cold, too--even in July!) and the sun has greater burning potential, the director of the Mountain Research Station strongly urges you to add the following items to the MUST BRING list.

1. 2 pairs of WOOL sox.
2. Some type of gloves or mittens.
3. Chapstick and sun screen (sun tan) lotion for protection.
4. A small backpack, if you have one.
5. WARM jacket.

Willard Administrative Center • Campus Box 135 • Boulder, Colorado 80309 • (303) 492-8241

The director also reminded us it is very important that you be in really good health in order to work and live at that altitude. Check with a doctor if you have any questions about your health and working at 9,000+ foot elevation.

Hopefully, we will be able to attend the White Buffalo Council Pow-Wow July 17 or 18. Many field trips are being scheduled to places in and near the Boulder area including the Earthquake Research lab, a coal mine, an oil field and the museums of the area.

All in all, it will be a busy month but one in which you will have good times, make good friends, meet new people and learn many things that will help you decide if science and/or math are the areas you want to study in college.

* * *

I hope I have given you some ideas of what July will be like. Now there are things you need to do to join the FIPSE group. Enclosed is a check-sheet telling you when I will send things to you and when they are due back to me. Put this check-sheet in a very prominent place and check things off as they happen and do be prompt in keeping deadlines.

* * *

I will be sending you the next Newsletter May 1 with the questionnaire, autobiography and Writing Sample request.

* * *

Meantime, enjoy the last month of school, and if you have questions or concerns, write to me.

Ann Card
Director - FIPSE Program

UNIVERSITY OF COLORADO, BOULDER

American Indian
Educational Opportunity Program

Summer Science & Math Institute

NEWSLETTER II

1 May 1981

Enclosed is a copy of a questionaire that I would like for you to complete. The information you put on the questionaire will enable us to plan summer activities that will be more in line with your interests, needs and experiences.

* * *

In addition to the questionaire, I would like for you to write an autobiography. (Remember that an autobiography is the story of your life.) In the autobiography, please tell me some things about your family: i.e., what your parents do, what kind of home you have, how many brothers and sisters you have and about other important people in your life. You need to tell me what kind of person YOU are: i.e., are you shy, outgoing, studious, a "jock". Do you have a steady girlfriend/boyfriend? What kinds of things do you like/dislike doing? What are your ambitions? Make the autobiography an introduction of yourself.

* * *

The third thing I have enclosed is a Writing Sample Request. Follow the directions at the top of the sheet. The Writing Sample will be used to determine the level of your writing skills so please DO NOT get any help from a teacher or parent. DO NOT have anyone correct any part of your Writing Sample. Make it your very own work only!

This will be the most work you will be asked to do at any one time, FIPSE-ite, so please do a good job on these three items and return them to me by May 12.

Teachers have been hired for the summer and I will tell you about them in the next Newsletter.

Remember: if any of you have questions or concerns please be in touch. My office telephone is 303/492-8241. You already have my mailing address.

I am expecting to hear from each of you by May 12.

Ann Card
Director - FIPSE Program

Enclosures

Willard Administrative Center • Campus Box 135 • Boulder, Colorado 80309 • (303) 492-8241

UNIVERSITY OF COLORADO, BOULDER

American Indian
Educational Opportunity Program

FIPSE Summer Science & Math Institute

NEWSLETTER III

18 May 1981

Thank you everyone for sending your questionaire and autobiographies. Those of you who have not yet returned them, hurry up! We need the information.

* * *

Enclosed is another questionaire we need to have you complete. Send it back as soon as possible, please. I had planned on sending you a calendar of summer activities but there are too many unconfirmed dates. You will have to wait until the next Newsletter for a calendar.

In addition to the questionaire enclosed that you need to fill out, I want you to write a letter to another member of the group. The name of the person you should write is:_____
The address is :

_____

_____

Make your letter an introduction of yourself. If you have time and want to write to more than one person, go ahead. But be sure you write to the one indicated above.

* * *

Chris has added a note to some of you about social security numbers. Be sure you send what she needs.

* * *

Teachers have been hired. Ken Wilson will be the math/science teacher and Patricia Rice will be the reading/writing teacher. More about them in the next newsletter.

* * *

Get busy now and get the checklist up to date. Next newsletter will be June 1. Meantime, keep sending back what information has been requested. Only a few weeks remain until July 5. Enjoy your vacation!.

Ann Card
Director - FIPSE Program
Enclosure

Willard Administrative Center • Campus Box 135 • Boulder, Colorado 80309 • (303) 492-8241

UNIVERSITY OF COLORADO, BOULDER

American Indian
Educational Opportunity Program

FIPSE Summer Science & Math Institute

NEWSLETTER IV

5 June 1981

This newsletter is late reaching you because we have been waiting to summarize information to you so you will know who is doing what with you this summer.

Teachers:

Math/Science -- Ken Wilson

Reading/Writing -- Patricia Rice

Teacher Aides:

Math/Science -- Bill Borgeman

Reading/Writing -- Grace Segura

Dormitory Counselors:

Robin Carufel

Lisa Beach

Ken Wilson taught the FIPSE Science and Math Program last summer so he's an old hand at this. He's been teaching in Belmont, Massachusettes this past year. Before that he spent some time at Ramah Navajo School and at Ft. Defiance Junier High.

Patty Rice has been teaching in Hopkinton, Massachusettes this past year. In previous summers, she has taught on the EOP program here at the University.

Bill Borgeman is a math major here at the University of Colorado.

Grace Segura just graduated in bilingual education from Metro State and is hoping to teach in the fall.

Robin Carufel is from Wisconsin. He works with the Wisconsin Woodland Indian Project there.

Lisa Beach will be a senior here at the University of Colorado next fall. She's majoring in museum study.

Willard Administrative Center • Campus Box 135 • Boulder, Colorado 80309 • (303) 492-8241

* * * *

Enclosed is a form for you to fill out and send us your travel plans. Please mail this back immediately so we can arrange for one of the staff to meet your plane or bus in Denver. If you are driving, we will send you a campus map so you know where to come once you are on campus.

* * * *

A vary few of you have not sent your writing sample, autobiography and/or tribal information. Please get this to us at once.

* * * *

A couple weeks ago, Chris Korb sent a form to you for income verification to see if any of the FIPSE students can qualify for food assistance this summer. I'm afraid we have confused some of you so let me try to explain.

1) Whether or not your income meets the guidelines does not affect your participation in the program. You are in FIPSE for the summer.
2) If you do not qualify for food assistance it simply means we get reimbursed for food, which leaves money for other activites.
3) You need to give us proof if you qualify for the food program. The proof can be a notarized statement or a copy of a form from income taxes.
4) If you have questions, please call Chris or myself or drop a note.

* * * *

A Summer Calendar will be in the next Newsletter which will leave my office June 20. Meantime, write your letters if you haven't already, get your travel plans in and enjoy your summer.

Ann Card
Director - FIPSE Program
Enclosure

UNIVERSITY OF COLORADO, BOULDER

American Indian
Educational Opportunity Program
FIPSE SUMMER SCIENCE/MATH PROJECT

June 2, 1980

Dear

Enclosed is a questionnaire I'd like for you to complete. It will give us more information about you so that we can plan summer activities that will be more in line with your interests, needs, and experiences.

In addition to the questionnaire I would like for you to write an autobiography. (Remember an autobiography is the story of your life!) In the autobiography please tell me some things about your family, what your parents do, what kind of home you have, your brothers, sisters, and other important people in your life. You should also refer to what kind of person you are--Are you shy, rowdy, studious, a "jock"? --Do you have a steady boyfriend/girlfriend? What kinds of things do you like/dislike doing? What are your ambitions? Make your autobiography an introduction to yourself. Please send the autobiography and the questionnaire back to me NOT LATER than June 16.

Last week I went up to the Mountain Research Station where we will be spending four days. Because the station is very high in the mountains (9,000+ feet) and because we will be hiking and working in remote tundra areas where the winds are very strong (and cold, too--even in July!) and the sun has greater burning potential, the director of the Mountain Research Station strongly urges you to add the following items to the MUST BRING list.

1. 2 pairs of WOOL sox.
2. Some type of gloves or mittens.
3. Chapstick and sun screen (sun tan) lotion for protection.
4. A small backpack, if you have one.
5. WARM jacket.

The director also reminded us it is very important that you be in really good health in order to work and live at that altitude. Check with a doctor if you have any questions about your health and working at 9,000+ foot elevation.

When I mailed your handbook and various forms off to you, apparently I didn't include the permission forms in some of the packets. If you are missing the acceptance form or any other forms or the calendar, add a note when you return your questionnaire and I'll send the forms off to you immediately.

June 16 is the next deadline for you--please have your questionnaire and autobiography in to my office by that date. Enjoy your vacation. I'll be in touch again soon.

Sincerely,

Ann Card

Willard Administrative Center • Campus Box 135 • Boulder, Colorado 80309 • (303) 492-8241

FIPSE STUDENT QUESTIONNAIRE

Date: _____

Name: _____
LAST FIRST MIDDLE

Social Security Number: _____

Home Address: _____

_____

Telephone: _____ Grade Completed Spring 1981 _____

High School Attended: _____

High School Address: _____

_____

High School Telephone: _____

Name of Parent/Guardian: _____

Address of Parent/Guardian: _____

_____

Telephone of Parent/Guardian: _____

Brothers' Names	Age	Sisters' Names	Age

My Overall Feeling About School: 1 2 3 4 5
Dislike Like

In School, Best Liked Subjects: _____

_____

Least Liked Subjects: _____

_____

In School, Easiest Subjects: _____

_____

Hardest Subjects: _____

_____

Kind of Books I Like To Read: _____

In The Last Six Months, I Have Read About _____ Books.
(How Many)

LEISURE TIME

My Hobbies are: _____

Fun Things I Like To Do Are: _____

_____

In My Free Time, My Favorite Pasttime is: _____

My Favorite Physical Activity (Sport) is: _____

Offices I have Held - Honors I Have Received: (Student Council, Club Officer, Medals, etc.)

_____

_____

Jobs I Have Done:

JOB?	WHERE?	HOW LONG?

I Like To (Rate 1 for LOTS, 2 For OKAY, 3 For DISLIKE):

____Play Basketball	____Play Volleyball	____Play Frisbee
____Run or Jog	____Go For Walks	____Other (Specify)
____Swim	____Play Softball	_____

HEALTH

Do You Have Normal Eyesight? _____ Yes _____ No

Do You Wear Glasses? _____ Yes _____ No

Do You Have Normal Hearing? _____ Yes _____ No

Do You Consider Yourself Healthy? _____ Yes _____ No

If Not, Why? _____

_____

Do You Take ANY Medication Regularly? _____ Yes _____ No

If So, What? _____

What Condition is Medication For: _____

_____

Name of Doctor Who Prescribes Medication: _____

Address of Doctor Who Prescribes Medication: _____

_____

_____

(Telephone of Doctor)

My Religious Preference Is: _____

I Would _____/Would Not _____ Like the Times and Locations of the Church in Boulder.

ABOUT MYSELF

1. My Ambition Is To _____

_____

2. A Secret Wish I Have Is _____

_____

3. I Get Really Angry When _____

_____

4. I Am Most Scared When _____

_____

5. I Am Happiest When _____

_____

6. I Feel Best About Myself When _____

_____

7. What I want More Than Anything Else Is _____

_____

8. I Couldn't Live Without _____

9. My Best Friend Is _____

10. My Favorite Kind Of Person Is _____

_____

11. My Very Best Qualities Are _____

_____

12. What I Like Least About Myself Is _____

_____

13. This Is How I Feel About Myself (Circle One):

1 (YUK) 2 (NOT TOO BAD) 3 4 5 6 (GETTING BETTER) 7 8 9 10 (THE GREATEST)

14. I Prefer (Check A or B - Not Both):

A	B
_____ To Work On My Own	_____ To Work In A Group
_____ To Work In A Non-competitive Atmosphere	_____ To Work Where Competition Is Part Of The Reason For Doing A Job
_____ To Go At My Own Pace When Completing A Job	_____ To Work With Deadlines & Time Limits To Get A Job Done
_____ To Work Where I Do A Job Because I Want To Accomplish It	_____ To Work Where There Is A Challenge To Do A Job And A Reward When It Is Done
_____ To Work Where I Organize My Own Time & Method With A Clear Understanding Of The Final Objective	_____ To Work With Very Specific Directions & Frequent Checks By An Adult

15. I Will Be Very Pleased If By The End Of The Summer I Have _____

_____

_____

UNIVERSITY OF COLORADO-BOULDER

FIPSE SUMMER SCIENCE/MATH INSTITUTE

STUDENT AGREEMENT FORM

Admission into the FIPSE Summer Science/Math Institute is separate and distinct from other University admission and retention policies. The FIPSE admission staff interviews and tests applicants to the Institute. Only those students who agree to the conditions below will be considered for admission.

I, _____, as part of admission to the
(name)
FIPSE Summer Science/Math Institute accept the conditions stipulated below:

1. I will participate in the testing and orientation programs.
2. I will attend class unless excused by a staff member.
3. I will complete, on time, all course assignments.
4. I will participate in weekly individual and/or small group counseling sessions conducted by the counselor.
5. I will accept the prescribed class schedule.
6. I will attend any meeting arranged by the instructor and/or counselor if necessary.
7. _____
8. _____

I understand that failure to abide by these conditions could result in the termination of my student status in the FIPSE program.

I understand that this contract is terminated when I have completed the courses in the FIPSE Institute and/or other conditions of this contract.

_____ _____
(Student's Signature) (Date)

_____ _____
(Counselor's Signature) (Date)

FORM I - INFORMED CONSENT

I, _____ have read the handbook and have decided I do want to participate in the FIPSE Summer Science/Math Institute. My parents (guardian) have also given their permission for mey to attend.

Please consider me a participant.

_____ _____
Date Sign here

I agree to let my son/daughter participate in the FIPSE Project.

_____ _____
Date Parent's Signature

FORM II - IN LOCO PARENTIS

Permission is herby given for adult members of the FIPSE Summer Science/Math Institute to act as my representative in signing for any medical services needed by my son/daughter _____.
Student's Name

I understand all due efforts will be made to insure safety and good health of the members of the Institute. Should an accident occur, I will in no way hold the Institute responsible.

_____ _____
Date Parent's Signature

Please give the name and phone number of a relative or friend who we can call if there is an emergency and we cannot get in touch with you.

_____ _____
Name of Friend or Relative Phone Number

CHECKSHEET

NAME _____ HOME ADDRESS _____

PHONE _____ _____

HIGH SCHOOL _____

STATUS: REG. PARTICIPANT ____ TELEPHONE ____ DATE ____ PERSON _____

ALTERNATE ____ LETTER ____ DATE ____ PERSON _____

	DATE SENT	DATE RECEIVED
CHECK SHEET		
HANDBOOK		
INFORMED CONSENT		
IN LOCO PARENTIS		
MAILED QUESTIONNAIRE		
RECEIVED QUESTIONNAIRE		
RECEIVED AUTOBIOGRAPHY		
NEWSLETTER I		
TRAVEL PLANS		
PICK-UP ASSIGNED TO:		
NEWSLETTER II		

ADDITIONAL CONTACTS:

TOPIC	DATE

TEST RESULTS:	READING	MATH

FORM III - TRAVEL PLAN

I plan to arrive by:

____ Plane _____ (give name of airline)

____ Train _____

____ Bus _____ (give name of busline)

in Denver on _____ (date), at _____ (time).

OR

I am planning to drive from _____ to _____ on _____ (date) and will arrive on the campus before 5:00 pm July 6th.

_____ Date

_____ Student's Signature

For evaluation purposes we need the following information about each of you.

Your Name _____

Your Home Mailing Address

_____

_____

Your Father's Name _____ Living__ Dead__

Occupation _____

Education Level _____

Tribe _____ Blood Quantum _____

Enrolled? ___ yes ___ no Where? _____

Your Mother's Name _____ Living__ Dead__

Occupation _____

Education Level _____

Tribe _____ Blood Quantum _____

Enrolled? ___ yes ___ no Where? _____

Do you live with Mother & Father _____ Only Father _____

Only Mother _____ Neither _____

To whom and to what address may we send a letter inviting your family to a final dinner as well as a progress report on the work for the FIPSE?

Name _____

Address _____

_____

City State ZIP

FIPSE STUDENT QUESTIONNAIRE: DATE _____

NAME _____
LAST FIRST MIDDLE NICKNAME

HOME ADDRESS _____

_____

TELEPHONE _____ GRADE COMPLETED SPRING 1980 _____

HIGH SCHOOL ATTENDED _____

HIGH SCHOOL ADDRESS _____

HIGH SCHOOL TELEPHONE _____

NAME OF PARENT/GUARDIAN _____

ADDRESS _____ TELEPHONE _____

BROTHERS' NAMES	AGE	SISTERS' NAMES	AGE

MY OVERALL FEELING ABOUT SCHOOL: 1 DISLIKE ← 2 3 4 → 5 LIKE

IN SCHOOL, BEST LIKED SUBJECTS _____

_____

LEAST LIKED SUBJECTS _____

_____

EASIEST SUBJECTS _____

_____

HARDEST SUBJECTS _____

_____

KIND OF BOOKS I LIKE TO READ _____

IN THE LAST SIX MONTHS I HAVE READ ABOUT _____ BOOKS.
(HOW MANY)

LEISURE TIME

MY HOBBIES ARE: _____

FUN THINGS I LIKE TO DO ARE _____

_____

IN MY FREE TIME MY FAVORITE PASTTIME IS _____

MY FAVORITE PHYSICAL ACTIVITY (SPORT) IS _____

OFFICES I HAVE HELD – HONORS I HAVE RECEIVED: (STUDENT COUNCIL, CLUB OFFICER, MEDALS, ETC.)

_____

_____

JOBS I HAVE DONE:

JOB?	WHERE?	HOW LONG?

I LIKE TO (RATE 1 FOR LOTS, 2 FOR OKAY, 3 FOR DISLIKE)

_____ PLAY BASKETBALL	_____ PLAY VOLLEYBALL	_____ PLAY FRISBEE
_____ RUN OR JOG	_____ GO FOR WALKS	_____ OTHER (SPECIFY)
_____ SWIM	_____ PLAY SOFTBALL	_____

HEALTH

DO YOU HAVE NORMAL EYESIGHT? _____ YES _____ NO

DO YOU WEAR GLASSES? _____ YES _____ NO

DO YOU HAVE NORMAL HEARING? _____ YES _____ NO

DO YOU CONSIDER YOURSELF HEALTHY? _____ YES _____ NO

IF NOT, WHY? _____

_____

DO YOU TAKE ANY MEDICATION REGULARLY? _____ YES _____ NO

IF SO, WHAT? _____

_____

WHAT CONDITION IS MEDICATION FOR:

_____

_____

NAME & ADDRESS OF DOCTOR WHO PRESCRIBES MEDICATION:

_____
NAME

_____
ADDRESS

_____
PHONE

MY RELIGIOUS PREFERENCE IS: _____

I WOULD _____ / WOULD NOT _____ LIKE THE TIMES AND LOCATIONS OF THE CHURCH IN BOULDER.

ABOUT MYSELF

1. MY AMBITION IS TO _____

_____

2. A SECRET WISH I HAVE IS _____

_____

3. I GET REALLY ANGRY WHEN _____

_____

4. I AM MOST SCARED WHEN _____

_____

5. I AM HAPPIEST WHEN _____

_____

6. I FEEL BEST ABOUT MYSELF WHEN _____

_____

7. WHAT I WANT MORE THAN ANYTHING ELSE IS _____

_____

8. I THINK I WOULD NOT BE ABLE TO EXIST IF _____

_____

9. MY BEST FRIEND IS _____

_____

10. MY FAVORITE KIND OF PERSON IS _____

_____

11. MY VERY BEST QUALITIES ARE _____

_____

12. WHAT I LIKE LEAST ABOUT MYSELF IS _____

_____

13. THIS IS HOW I FEEL ABOUT MYSELF (CIRCLE ONE):

1 2 3 4 5 6 7 8 9 10

(YUK) (NOT TOO BAD) (GETTING BETTER) (THE GREATEST)

14. I PREFER (CHECK A OR B – NOT BOTH)

A	B
___ TO WORK ON MY OWN	___ TO WORK IN A GROUP
___ TO WORK WHERE COMPETITION IS PART OF THE REASON FOR DOING A JOB	___ TO WORK IN A NON-COMPETITIVE ATMOSPHERE
___ TO GO AT MY OWN PACE WHEN COMPLETING A JOB	___ TO WORK WITH DEADLINES & TIME LIMITS TO GET A JOB DONE
___ TO WORK WHERE THERE IS A CHALLENGE TO DO A JOB AND A REWARD WHEN IT IS DONE	___ TO WORK WHERE I DO A JOB BECAUSE I WANT TO ACCOMPLISH IT
___ TO WORK WITH VERY SPECIFIC DIRECTIONS & FREQUENT CHECKS BY AN ADULT	___ TO WORK WHERE I ORGANIZE MY OWN TIME & METHOD WITH A CLEAR UNDERSTANDING OF THE FINAL OBJECTIVE

15. I WILL BE MOST PLEASED IF BY THE END OF THE SUMMER I _____

_____

APPENDIX III

STUDENT HANDBOOK

STUDENT HANDBOOK

SCIENCE AND SELF-DETERMINATION

FIPSE SUMMER SCIENCE/MATH INSTITUTE
UNIVERSITY OF COLORADO, BOULDER, COLORADO
JULY 5 - AUGUST 1, 1981

IMPORTANT PEOPLE AT THE UNIVERSITY

AMERICAN INDIAN EDUCATIONAL OPPORTUNITY PROGRAM

WARD CHURCHILL	-	Director
MARY JO BARLOW	-	Counselor
ROSEANNA SNEED	-	Counselor
CAROL MOOR	-	Secretary

SCIENCE AND SELF-DETERMINATION FIPSE PROJECT

ANN CARD	-	Director
CHRIS KORB	-	Administrative Aid

UPWARD BOUND

RICHARD WILLIAMS	-	Director
RICHARD WILDAU	-	Counselor
SALLY WILLIAMS	-	Secretary

MAILING ADDRESS

AI-EOP; FIPSE Project
Campus Box 135
University of Colorado
Boulder, Colorado 80309

OFFICE TELEPHONE: (303) 492-8241

PARTICIPATING STUDENTS

NAME	SEX	AGE	GRADE	TRIBE	STATE
1. Sharon Austin	F	16	10	Navajo	New Mexico
2. April Baca	F	14	9	Hopi	Arizona
3. Clorine Bearstail	F	16	11	Ft. Berthold-3 affiliated	North Dakota
4. Ricky Begay	M	16	10	Navajo	New Mexico
5. Lucinda Benally	F	15	10	Navajo	New Mexico
6. Darwin Eagle Elk	M	15	10	Oglala Sioux	South Dakota
7. Stephen Etsitty	M	15	10	Navajo	Arizona
8. Cathie Frazier	F	14	10	Cheyenne River Sioux	Montana
9. Michael Gardipe	M	16	11	Pawnee	Colorado
10. Tony Holiday	M	16	10	Navajo	Arizona
11. Laura Honawa	F	15	10	Hopi	Arizona
12. Eunice Johnson	F	15	10	Navajo	New Mexico
13. Maurita Lee	F	15	10	Hopi	Arizona
14. Gloria Marie Mahle	F	16	10	Hopi/Tewa	Arizona
15. Christopher Manydeeds	M	17	11	Hunkpapa Sioux	Wisconsin
16. Sherry McCloskey	F	13	8	Rosebud Sioux	South Dakota
17. Regina Nelson	F	15	10	Navajo	Arizona
18. Cathleen Newby	F	15	10	Navajo	New Mexico
19. Hankie Poafpybitty	F	14	8	Kiowa-Caddo	Oklahoma
20. Scott Phillips	M	14	9	Omaha	Kansas
21. George Pradt	M	15	10	Laguna	New Mexico
22. Margaret Riley	F	15	10	Choctaw-Chickasaw	Arizona
23. Terrance Roy	M	14	8	Pine Ridge-Lakota	South Dakota
24. John Rupnicki	M	15	10	Pottawatomi	Arizona
25. Benny Shendo, Jr.	M	16	11	Jemez	Arizona
26. David Smart	M	14	9	Oneida	Wisconsin
27. Vincent Yazzie	M	15	10	Navajo	Arizona

ALTERNATES

NAME	SEX	AGE	GRADE	TRIBE	STATE
1. Deannah Neswood	F	15	10	Navajo	Arizona
2. Aretta Hubbard	F	15	10	Navajo	Arizona
3. Dorothy Begay	F	14	9	Navajo	New Mexico
4. Charles Mousseau	M	15	9	Lakota	Colorado
5. Michele Bearstail	F	16	10	Ft. Berthold-3 affiliated	North Dakota
6. Dorothene James	F	15	10	Navajo	Arizona

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or
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Charles Mousseau
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(303) 494-4055

Deannah Neswood
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St. Michaels, AZ 87511
(602) 871-4969

Welcome to the FIPSE Summer Science/Math Institute. The month of July, 1981 will be a month you will never forget. We hope it will be because of all the new things you learn and new experiences you have. This handbook has been put together to give you information about life on the campus at the University of Colorado. We will discuss the content and answer questions during orientation. So read the handbook and list your questions, because you are responsible to know, understand, and abide by the rules and regulations of the University.

HOUSING AND MEALS

Students will be living in Hallet Hall. Two students will be assigned to each room. You will receive your room assignment and key when you arrive on campus July 5. Meals will be served in the dining room at Nichols Hall. A meal card to admit you to the dining room will be given to you on the evening of your arrival. You must have this meal card to be admitted to the dining room. On several occasions, we will be eating meals away from the dining room. You will be told in advance about these occasions.

Here are some other items of general information you will need to know about living on the campus.

1. Keys: Only one key will be issued to each resident when he/she checks into the residence hall.

2. Loss of personal property: Although the University exercises reasonable efforts to protect student property, it assumes no responsibility for the theft, destruction, or loss of money, valuables, or other personal property belonging to, or in the custody of, the student for any cause whatsoever, whether such losses occur in the student's room, storage rooms, public areas, elsewhere in the hall, or in the baggage related to shipment and storage. Some suggestions are offered for the protection of your property. You are urged to: 1) lock you room when you're out, even for a few minutes, and 2) report to the hall office any items that are stolen or missing, immediately.

3. Cleaning: Students are responsible for cleaning their own rooms. Equipment will be made available in designated areas in each hall for this purpose. Students are expected to keep thier rooms in a reasonable state of cleanliness. When a student vacates a room he/she is expected to remove all items that were brought into the room, including items of decoration and items regarded as trash. He/She is responsible for cleaning the room and its facilities so that it is left in approximately the same condition as when the student moved in.

4. Linen: At check in, each resident will be issued a set of linen consisting of a blanket, mattress pad, pillow case, and two sheets. The resident is thereafter responsible for exchanging sheets and pillow case for clean linen at the time set for linen change. When the resident vacates the building, he/she is responsible for returning the complete set of lines. Towels and washcloths are provided.

5. Laundry facilities: Washing machines and dryers are located in the basement of your resident hall. Washing machines are 35¢ and dryers are 25¢. You will need to provide your own money for laundry soap and for doing laundry.

6. Dorm hours: Since the schedule for the Summer Institute is intensive, all students are expected to be in the dorm by 8:00 p.m. unless there is a function going on elsewhere. Lights will be out at 10:30 p.m. sharp.

7. Quiet hours: Radios, musical instruments, and televisions should be played at reasonable times so they won't interfere with the study or sleep of other students. Recreation rooms are recommended for large group activities.

Other Rules the University Enforces Include the Following:

1. Firecrackers: Boulder fire prevention ordinances prohibit the manufacture, sale, use, and possession of all fireworks anywhere within the city limits including the University campus.

2. Fire alarm system and equipment: The fire alarm system and fire fighting equipment are for your protection in the residence halls. Tampering with fire fighting equipment or setting off a false alarm not only makes the system ineffectual but also endangers the lives of others in the residence halls.

3. Elevators: Many of the halls are equipped with service and/or passenger elevators. Tampering with or misuse of elevators is a safety hazard and is prohibited.

4. Dormitory roofs and outside walls: Because of the danger involved and the roof damage that can occur, climbing on the roofs of the residence halls is prohibited. Climbing from the windows and scaling or repelling outside walls is prohibited.

5. Windows and screens: Stops on windows and screens are not to be removed. There is a service fee for replacement. Because of the danger involved, throwing anything from windows, climbing from windows, scaling outside walls, and storing items of any kind on window ledges are prohibited. It is suggested to keep windows locked when you are not in the room.

6. Appliances: In the residence halls, several student rooms are wired into the same circuit. Normally one should not plug more

than two appliances into one electrical outlet. Electrical appliances which are acceptable for use in student rooms are: radios, clocks, irons, blow dryers, and curlers.

7. Reasonable care is to be exercised in use of dormitory furniture and resident hall furnishings.

TRANSPORTATION

Transportation to and from Boulder is your responsibility. However, the staff is planning to pick up airline, train, and bus passengers in Denver and bring them to Boulder. We will be in contact with you closer to July about your travel plans.

Transportation for Institute activities will be provided. Boulder is an easy city to get around in, either by walking or by taking the bus. Participants should not plan to bring cars or bikes. Hitch-hiking will not be permitted.

MAILING ADDRESS

During your stay on the campus, you may receive mail by having it addressed to yourself at:

NAME (yours, of course!)
AI-EOP/FIPSE Project
Campus Box 135
University of Colorado
Boulder, Colorado 80309

TELEPHONE

There are telephones in the dorm available to students for local calls. Any long distance calls must be made through the AI-EOP office, and you must arrange for the long distance call with an adult counselor. These long distance calls will be made in emergency situations only.

Should your family need to reach you, they may do so by using the following number which is the AI-EOP office (303-492-8241). Someone is at the telephone Monday-Friday 8:00 a.m. to 5:00 p.m., and during the summer, from 7:30 a.m. to 4:30 p.m.

At a later date, we will provide you with the number of your residence hall that your parents can use if they want to call you in the evening. Person-to-person long distance calls are the wisest way to call since you may not be readily "available" at all times to be reached by telephone.

RECREATION

The University campus provides a wide variety of recreational opportunities. You will be given a recreation center pass which will allow you to use the swimming pool, tennis courts, weight lifting equipment, handball courts, etc. There will be some scheduled activities (softball games, frisbee contests, and the like) for you as well as speakers, plays, etc., that are always

scheduled on campus during the summer. There is a movie theater on campus, as well as a bowling alley, pool hall, and pinball machines, snack bar, etc.

MONEY

If you plan to buy souveniers, play pinball, or do other things that will cost money, you need to bring spending money with you. Five to ten dollars a week for incidentals should be sufficient. We cannot be responsible for lost or stolen money. However, we will be happy to keep extra money for you rather than have you keep it in your room.

CHURCH SERVICES

There are many churches in Boulder that you may attend if you choose to do so. A questionnaire you will be receiving will have a place for you to indicate your religious preference so that by the time you arrive in Boulder, we will have the location and time of services for any denominations indicated. If the church is not within walking distance, we will help you find transportation.

CONTRACTS AND EXPECTATIONS

Each student will receive a contract of performance and behavior. The contract will be explained at orientation. You are expected to sign and abide by the contract if you wish to participate in the program.

The possession, sale, use, and/or distribution of illegal drugs is a violation of Colorado state law. Any student involved in such illegal activities can be arrested by the University police. Furthermore, any student involved in any such illegal activities will be expelled promptly from the program. The same is true of the use and/or sale of alcohol.

The use of cigarettes is strongly discouraged because of your health and safety and for the comfort and health of those around you. The purchase of cigarettes by those under 16 is illegal in Colorado.

THINGS TO BRING

MUST HAVE:

1. Comfortable clothes -- jeans, shirts, dresses, skirts -- whatever you are used to wearing. Include a light sweater, sweatshirt, or jacket for use in the evening if you are outdoors. We suggest that you have enough changes of clothes to last a week since there will be limited time to do laundry.

2. Warm sweater or jacket for use in the mountains.

3. Hiking boots or very heavy shoes. Do not bring new hiking boots. Break them in or do not bring them because mountain hiking is not a place for new boots!

4. Warm socks.

5. Laundry detergent.

6. Items for personal hygiene (comb, toothbrush, shampoo, etc.).

7. Pens and pencils.

8. Sewing kit (at least a needle and thread and scissors).

9. Clock with an alarm.

HELPFUL BUT NOT REQUIRED

1. Shorts
2. Swim suit
3. Dark glasses
4. Backpack
5. Radio
6. Camera
7. Guitar or small musical instrument
8. Wristwatch

LEAVE AT HOME

1. Pets and cars
2. Televisions
3. Stereo equipment
4. Expensive jewelry

CLASS AND ACADEMIC ACTIVITIES

Classes will be held in the Business Administration Building. No food or drink and no smoking is permitted in the classrooms. On certain days of the week, some classes will be held in the NOAA laboratories which are located off-campus. On two separate weekends, the entire Institute will be at a mountain location -- one weekend at a mountain camp, and the other at the Mountain Research Station. (Now you know why you need heavy shoes or hiking boots.) Several field trips will be taken to various locations in the surrounding area and a number of guests will visit the program to talk with students.

Two teachers will be responsible for classroom instruction which will be tailored to student's general level of achievement and need. The classroom will not be a "sit still and listen" type -- rather you will be doing things yourself.

Some career counseling will be done so you have a chance to learn about the various careers in science and math and which one (if any) is best for you.

Some "survival skills" will be on the program too, -- how to take tests, how to use the University library, how to apply for college, financial aid, scholarships, etc.

A copy of the schedule will reach you in the next few weeks.

MEDICAL AND INSURANCE INFORMATION

The FIPSE Project has purchased accident insurance for participants of the Institute. The insurance will be in effect from July 5 until August 3 which will cover your travel time to and from the Institute. There is a $25 deductible clause for each use. Also, the insurance requires that parents sign the "in loco parentis" form providing permission for University staff to obtain medical services for students should an accident or illness occur. This insurance is provided at no cost to you. The FIPSE project is paying for the coverage.

Also, on campus there is available medical services for minor illnesses. If a student should become seriously ill or injured, parents will be notified and the student will be sent home as soon as possible. It is necessary, therefore, that parents provide the name of a relative or friend that can be reached by telephone should an emergency arise and should we be unable to reach parents.

THINGS YOU MUST DO

Now that you have been chosen to participate in the FIPSE Project and you have read this handbook, you must begin the process of joining the group.

1. Enclosed with this handbook is a form saying you will/will not participate as a member. Please sign this form and return it IMMEDIATELY. We need this so alternates can be notified if you choose not to come. Your parents/guardians need to sign it, too.

2. Also enclosed is an "in loco parentis" form for your parent/guardian to sign. It is to give permission for the program to authorize medical treatment if you should need it. Return this form along with your acceptance form.

3. Begin to think about how you're going to get to Boulder — you must arrive on July 5 before 5:00 p.m. We will be asking for your completed travel plans soon.

4. Within the next few weeks, you will receive a questionnaire. It will give us more information about you. When you receive the questionnaire, complete it promptly and return it to us.

5. If you have questions or if there are problems getting here, please write to see if we can help:

   Ann Card, Director
   FIPSE Project/AI-EOP
   Campus Box 135
   University of Colorado
   Boulder, Colorado 80209
   (303) 492-8241 - 8:00 a.m. - 5:00 p.m.

Once again, Welcome! We are looking forward to meeting each of you.

FORM I - INFORMED CONSENT

I, _____ have read the handbook and have decided I do want to participate in the FIPSE Summer Science/Math Institute. My parents/guardians have also given their permission for me to attend.

Please consider me a participant.

_____ (Date) _____ (Sign Here)

I agree to let my son/daughter participate in the FIPSE Project.

_____ (Date) _____ (Parent/Guardian)

FORM II - IN LOCO PARENTIS

Permission is hereby given for adult members of the FIPSE Summer Science/Math Institute to act as my representative in signing for any medical services needed by my son/daughter _____ (Student's Name).

I understand all due efforts will be made to insure safety and good health of the members of the Institute. Should an accident occur, I will in no way hold the Institute responsible.

_____ (Date) _____ (Parent/Guardian)

Please give the name and phone number of a relative or friend who we can call if there is an emergency and we cannot get in touch with you.

_____ (Name of Friend or Relative) _____ (Phone Number)

APPENDIX IV

TRAVEL PLAN REQUEST

FORM III - TRAVEL PLAN

I plan to arrive by:

___ Plane _____ (give name of airline)

___ Train _____

___ Bus _____ (give name of busline)

in Denver on _____ (date), at _____ (time).

OR

I am planning to drive from _____ to _____

on _____ (date) and will arrive on the campus before 5:00 pm July 6th.

_____ _____

Date Student's Signature

Please return this form (yes, another one) back to you with your travel plans. If, by chance, you have not written to another member of the FIPSE program, please do so right away. The Program is just a few weeks away and these thing need to be out of the way so we can get going!

Sincerely.

Yes! I sent a letter to _____ on (approximately) _____. I received a letter from _____ dated _____.

_____ _____

Your Name Date

APPENDIX V

ECHOES II

APPENDIX VI

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NOAA

Scheduled laboratory technical presentations from 1:00 - 3:00 p.m. for the following dates - July 7, 9, 14, 16 and 28. The 26 students will be divided into five groups of five students.

Scheduled personnel office presentation from 1:00 - 3:00 p.m. on July 28. All 26 students will participate as one group.

	July 7	July 9	July 14	July 16	July 28
1. Space/Solar Research	Group 1	Group 2	Group 3	Group 4	Group 5
2. Global Climate Research	Group 2	Group 3	Group 4	Group 5	Group 1
3. Remote Sensing Research	Group 3	Group 4	Group 5	Group 1	Group 2
4. Storm and Flood Disaster Research	Group 4	Group 5	Group 1	Group 2	Group 3
5. Air and Water Pollution Research	Group 5	Group 1	Group 2	Group 3	Group 4

APPENDIX VII

LIST OF FIELD TRIPS

Field Trips - 1981

Amaco Oil Well and Refining Plant - Wattenberg

Museum of Natural History - Denver

Johns Manville

Fiske Planetarium

Air Force Academy

Arapahoe Chemicals

USGS Geological Field Trip

EDGAR Mine

Earthquake Research Laboratory

APPENDIX VIII

LIST OF GUEST SPEAKERS

Guest Speakers - 1981

Don Phillips - Geologist

Andy Anderson - Chemist (Mohawk)

Carol Gardipe - Marine Geologist (Delaware)

Frank Dukepoo - Geneticist (Hopi)

Tony and Hazel Dukepoo - Traditional Hopi Leaders (Hopi)

Jack Twombly - Engineer

Al Bartlett - Physicist

Steve Manydeeds - Geophysicist (Hunkpapa Sioux)

David Baldwin - BIA - Office of Energy and Minerals

Kent Ware - Gulf Oil - Indian Affairs (Kiowa)

APPENDIX IX

STATISTICAL SUMMARIES

EVALUATION I

- SCALE +				
1	2	3	4	5
2		9	9	20
1	3	8	13	13
2	0	9	7	21
4	2	4	2	27
3	5	6	11	14
5	2	8	15	8
3	2	5	13	6
4	2	8	7	18
5	1	5	4	18
2	3	5	7	22
8	4	10	7	9
4	1	6	10	16
1	2	7	12	18
1	1	6	9	22
1	2	4	13	19
4	5	5	15	9
2	4	4	11	3
0	4	1	17	12

I. PRE-PLANNING

1. Receiving a handbook of information about the program requirements.
2. Signing an "informed consent" form.
3. Having your parents sign an informed consent permission form.
4. Receiving newletters about the progress of the program.
5. Completing the questinnaire.
6. Writing your autobiography.
7. Writing to another member of the group.
8. Submitting travel plans before your arrival.

II. ARRIVAL AND ORIENTATION

1. Being met at the airport or bus depot by staff member.
2. Welcome at the dorm by staff.
3. Having your picture taken.
4. Having a short orientation meeting the first night.

III. MONDAY MORNING ORIENTATION AND TESTING

1. Explanation of program by Ann
2. Introduction of staff members.
3. Introduction of fellow classmates.
4. Handbook review and contracts.
5. Explanation of academic schedule by Ken and Patty
6. Campus tour.

Rated on a scale of 1 (worst) to 5 (best).

Staff as well as students completed these evaluations.

EVALUATION OF RETREAT

- SCALE +					
1	2	3	4	5	ACCOMMODATIONS
0	2	5	8	8	General location of the camp
0	0	6	8	10	Food
1	3	11	8	1	Sleeping quarters
2	7	10	5	0	Shower facilities
					ACTIVITIES
1	1	2	9	11	Concentric circle
1	1	2	8	4	Nature hunt
2	0	7	6	11	Paper town
1	2	5	8	9	Group sharing - Bill Borgeman
1	1	4	6	14	Helping with the cooking and clean-up
0	2	2	7	10	Recreational time
1	1	4	3	8	Blind walk
2	1	3	6	7	Private thinking time
1	1	3	2	2	Sunday morning sharing
1	0	3	0	5	Art seminar - Ward Churchill
1	0	3	1	3	Crafts - Lisa Beach
1	1	2	2	1	Writing seminar - Patty Rice
0	1	3	2	11	Mapping - Ken Wilson
0	1	3	1	12	Cribbage - Chris Korb
2	1	1	4	15	Photography - Chris Korb
1	0	1	5	32	Skits
					OUTCOMES
1	0	3	4	15	Idea of building into a close-knit functioning group is valuable.
1	1	2	4	15	Idea of getting in touch with myself is valuable.
1	0	4	2	16	Idea of committing what I am willing to give to the group is valuable.
2	2	2	8	9	Idea of sharing my feelings in the Sunday morning group is valuable.

NOAA EVALUATION

The purpose of visiting the NOAA laboratories this summer was to have you, the student, be in contact with working scientists wo you could become familiar with the kind of work scientists do. We also wanted you to acquire some basic scientific concepts in various scientific areas--physics, chemistry, meteorology, etc. In light of these two objectives, please rate, on a scale of 1-5, the following statements as they apply to you.

- SCALE +				
1	2	3	4	5
0	1	0	4	20
0	0	0	3	22
0	0	3	8	13

I learned from listening and observing some of the kinds of activities scientists perform in their work.

I learned new scientific information from visiting the NOAA labs.

I learned the various steps scientists go through in arriving at new discoveries (e.g., collecting data, classifying and quantifying data, determining relationships, etc.).

GENERAL EVALUATION

- SCALE +				
1	2	3	4	5
2	0	4	7	19
1	1	5	15	10
2	0	4	13	13
0	1	0	4	20
0	2	1	4	21
3	1	6	7	15
1	2	10	10	9
0	0	0	10	15
0	2	0	6	20
0	0	3	8	15
1	1	7	10	8
5	1	2	5	3
1	0	3	7	20

LIVING ACCOMMODATIONS

Dorm room

Food

Laundry facilities

Recreation center facilities

Library facilities

Classroom facilities

Transportation facilities

INSTRUCTIONAL PROGRAM

Methods of instruction used by Teacher B

Methods of instruction used by Teacher A

Materials used by teachers

Amount of time given to instruction daily

COUNSELLING PROGRAM

Adequate career counseling information

Adequate personal counsellors to talk to if you wanted

MOUNTAIN RESEARCH STATION EVALUATION

- SCALE +				
1	2	3	4	5
1	0	0	2	22
1	2	1	0	21
0	0	0	3	22
0	0	0	1	24
0	0	0	3	22
0	0	1	2	20
0	0	1	2	22
0	0	1	4	20
0	0	3	7	15
0	0	2	6	16
0	0	0	2	23
0	0	0	1	25
0	0	0	1	25

ACCOMMODATIONS

- Transportation
- Sleeping quarters
- Food
- Shower facilities
- General overall environment

ACTIVITIES

- Classes
- Teacher A
- Teacher B
- Teacher C
- Hikes

OUTCOMES

- It is important to be aware of the environment and how nature functions.
- It is important to do some activities of a research nature rather than just hear about them.
- It is important to be involved on the site (tundra, glacier, mountain trails, forests, etc.) rather than to read or hear about these places, even if it means physical exertion and getting physically tired.

FOR NEXT YEAR

The four days at the Mountain Research Station were:

	3
	0
	22

- Too short
- Too long
- About right

The experience should be included in next year's schedule:

	26
	0

- Yes
- No